tubes, which penetrated the sporangium wall and ran over to the gnat. In twenty-four hours after the gnat was reached, sporangia were beginning to discharge in the new culture. In another case when infection was made

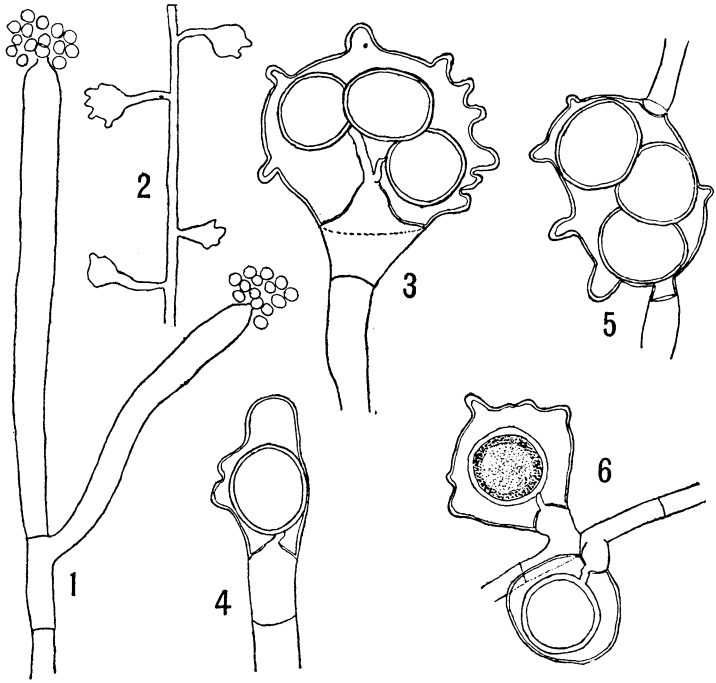

FIG. 1. Two emptied zoosporangia. ×335.—FIG. 2. Immature oogonia on a main hypha. ×75.—FIG. 3. Typical oogonium with three oospores; antheridium below and branched fertilizing tube arising from the partition. ×335.—FIG. 4. Oblong oogonium with antheridium. ×335.—FIG. 5. Intercalary oogonium, without an antheridium. ×335.—FIG. 6. Two short-stalked oogonia, with antheridia extending into main hypha. ×335.

with a hypha bearing some young oogonia, the gnat was penetrated by a hypha which arose from the stalk of one of the oogonia; not until forty-two hours later was the new growth conspicuous.—W. C. COKER and J. D. PEMBERTON, *Chapel Hill, N. C.*

ON THE ORIGIN OF ANGIOSPERMS[1]

In an extensive paper to be published during 1908, I have reached the following conclusions concerning the origin of angiosperms:

[1] After this paper had gone to press, it appeared in German) in Ber. Deutsch. Bot. Gesells. **25**:496, 497. 1907. The editors were not aware that it had been sent elsewhere for publication, and regret the unnecessary duplication.—EDS.

1. In Juliania the secretory canals are not wanting in the bark, as JADIN affirms. It is a genus of Rhoideae, exceptional in its 2–4 flowered cupula.

2. The Juglandaceae and also the Anacardiaceae are descendants of such Rhoideae as Juliania and Pistacia, but are still more reduced in the structure of flower and fruit.

3. The Brunelliaceae, Burseraceae, Irvingiaceae, Sabiaceae, Anacardiaceae, ENGLER'S Julianiales, Juglandales, and some genera of his Simarubaceae (Picrodendrum, Picramnia, Alvaradoa) must constitute together the old order Terebinthaceae.

4. Also, the Leitneraceae, Aceraceae, Amentaceae (1. Quercineae, 2. Myriceae, 3. Coryleae, 4. Casuarineae, 5. Betuleae), and Urticales, thus comprising most of the chalazogams, are reduced descendants of Pistacia-like Terebinthaceae, and not descendants of Hamamelidaceae or Columniferae (including Euphorbiaceae), the latter of which must be considered as reduced descendants of Buettnerinae.

5. From the preceding orders the Balanopsidaceae (Balanops and Trilocularia) differ much in anatomical structure; they are Hamamelidaceae and are related to Trochodendrum, Tetracentrum, Daphniphyllum, and Rhodoleia.

6. The Salicaceae must be regarded as reduced descendants of Flacourtiaceae, and related to Homalieae and Idesieae; the Lacistemaceae as a tribe of Flacourtiaceae next to Homalieae; and the Piperales (including Lactoris and Myrothamnus) as reduced descendants of Magnoliaceae.

7. The derivation of the Hamamelidales (Platanaceae and Hamamelidaceae), as congeners of the Saxifragaceae, from Magnoliaceae must also be maintained.

8. The chalazogamy of Ulmus, Juglans, and many of the Amentaceae suggests the presence of chalazogamy, and other embryological resemblances to Casuarina, in Myrica, Leitnera, Acer, Juliania, Pistacia, Rhus, and other Terebinthaceae.

9. As descendants of Terebinthaceae, and in accord with WIELAND'S discoveries among Bennettitaceae, in spite of WETTSTEIN'S opinion to the contrary, the Amentaceae (including Casuarina) and the Urticales are becoming completely out of the question as connecting links between gymnosperms and angiosperms, and cannot interfere longer with my opinion that the Magnoliaceae are descendants of Cycas-like or Bennettites-like gymnosperms.

10. Also the Gnetaceae, which in some respects resemble dicotyledons, and the Conifers, extremely adapted to xerophilous conditions, on account

of their much advanced reduction are out of the question as connecting links between gymnosperms and angiosperms.

11. The resemblances of Loranthaceae to Gnetaceae are not founded on natural affinity, all the Santalales being reduced descendants of Saxifragaceae or of Celastrales.

On account of the great importance of the problem under consideration, I recommend that the following forms be examined during this next season, as to their fertilization and embryology, by the botanists of Europe (Myrica, Acer, Pistacia, and Rhus), the United States (Myrica, Leitnera, Acer, Juliania, etc.), Tokyo (Myrica, Acer, Rhus), Buitenzorg and Peradeniya (Terebinthaceae).—HANS HALLIER, *Botanische Staatsinstitut, Hamburg.*

THE GENERIC NAME GOLDMANIA

DR. J. N. ROSE of the United States National Museum has kindly called my attention to the duplication of a generic name by the publication of *Goldmania* in my recent paper entitled "New or otherwise noteworthy Spermatophytes from Mexico, Central America, and the West Indies" (Field Col. Mus. Bot. Ser. **2**:247–287. 1907). This name having been used for a new genus of the Leguminosae, namely *Goldmania* Rose (Mém. Soc. Phys. et Hist. Nat. Genève **34**:274. 1903), I propose the name **Goldmanella,** gen. nov. of Compositae (Coreopsideae), for the plant which I described as *Goldmania.* The binominal may be formed as follows: **Goldmanella sarmentosa** Greenman, n. comb. (*Goldmania sarmentosa* Greenm. Field Col. Mus. Bot. Ser. **2**:270. 1907).—J. M. GREENMAN, *Field Museum of Natural History.*